IN THE DRAWINGS

Applicants respectfully request approval of the following drawing changes. Figure 5 has been amended to include a linear drive mechanism and a piezo-electric drive mechanism. Applicants submit a replacement drawing sheet incorporating the changes to Figure 5. Also submitted herewith is an annotated marked-up Figure 5 indicating the changes in red ink. No new matter has been added.

Remarks

The Office Action mailed March 3, 2006 has been carefully reviewed and the following remarks have been made in consequence thereof.

Claims 1-3, 10-13, 20, 21, and 22 are now pending in this application. Claims 1-3, 10-13, 20, and 21 are rejected. Claims 4-9 and 14-19 are canceled without prejudice, waiver, or disclaimer. Claim 22 is newly added. Claims 1, 3, 11, 13, and 20 have been amended. No new matter has been added. No fees are due for the newly added claim.

Applicants acknowledge that the restriction requirement has been made final, and Applicants have cancelled Claims 4-9 and 14-19, which were withdrawn from prosecution as a result of the restriction requirement.

The objections to the drawings is respectfully traversed. Applicants have amended Figure 5. Accordingly, Applicants respectfully request that the objections to the drawings be withdrawn.

The objections to Claims 3 and 13 under 35 U.S.C §112, second paragraph, is respectfully traversed. Applicants have amended Claims 3 and 13. Accordingly, Applicants respectfully request that the section 112 rejection to Claims 3 and 13 be withdrawn.

The rejection of Claims 1, 2, 11, 12, and 20 under 35 U.S.C. § 102(b) as being anticipated by Wieczorek et al. (U.S. Patent No. 6,252,927) is respectfully traversed.

Wieczorek et al. describe a scintillator layer (1) that consists of a plurality of scintillator elements (1a, 1b, 1c) (column 4, lines 6-7). A plurality of intermediate layers (3a, 3b) of radiation-absorbing metals are poured into a pattern of recesses along a plurality of side faces of the scintillator elements (column 4, lines 7-10). The scintillator layer is suitable for use in a known detector (column 4, lines 21-23).

Claim 1 recites an imaging system comprising "a radiation source configured to generate a beam; a collimator configured to collimate the beam to generate a collimated beam; and a detector configured to detect the collimated beam, wherein the

collimator is separate from said detector and is one of: a first collimator comprising at least one radio opaque member having a curved contour proportional to a contour of the detector; a second collimator with blades, wherein slopes of two oppositely-facing surfaces of at least one of said blades are different from each other; and a third collimator having at least two sets of plates, wherein said plates in a set pivot with respect to each other."

Wieczorek et al. do not describe or suggest an imaging system as recited in Claim 1. Specifically, Wieczorek et al. do not describe or suggest a detector configured to detect the collimated beam, where the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Wieczorek et al. describe a scintillator layer that consists of a plurality of scintillator elements. A plurality of intermediate layers of radiation-absorbing metals are poured into a pattern of recesses along a plurality of side faces of the scintillator elements. The scintillator layer is suitable for use in a known detector. Accordingly, Wieczorek et al. do not describe or suggest the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 1 is submitted to be patentable over Wieczorek et al.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 2 likewise is patentable over Wieczorek et al.

Claim 11 recites a computed tomography imaging system comprising "an x-ray source configured to generate a beam; a collimator configured to collimate the x-ray beam to generate a collimated x-ray beam; and a detector configured to detect the collimated x-ray beam, wherein the collimator is separate from said detector and is

one of: a first collimator comprising at least one radio opaque member having a curved contour proportional to a contour of the detector; a second collimator with blades, wherein slopes of two oppositely-facing surfaces of at least one of said blades are different from each other; and a third collimator having at least two sets of plates, wherein said plates in a set pivot with respect to each other."

Wieczorek et al. do not describe or suggest a computed tomography imaging system as recited in Claim 11. Specifically, Wieczorek et al. do not describe or suggest a detector configured to detect the collimated x-ray beam, where the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Wieczorek et al. describe a scintillator layer that consists of a plurality of scintillator elements. A plurality of intermediate layers of radiation-absorbing metals are poured into a pattern of recesses along a plurality of side faces of the scintillator elements. The scintillator layer is suitable for use in a known detector. Accordingly, Wieczorek et al. do not describe or suggest the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 11 is submitted to be patentable over Wieczorek et al.

Claim 12 depends from independent Claim 11. When the recitations of Claim 12 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claim 12 likewise is patentable over Wieczorek et al.

Claim 20 recites a method for reducing dosage of radiation incident on a subject, the method comprising "transmitting a beam of radiation toward the subject; collimating the beam of radiation before the beam reaches the subject; and detecting, by a detector, the collimated beam of radiation, wherein the collimating is performed

by a collimating device that is separate from the detector and is one of: a first collimator comprising at least one radio opaque member having a curved contour proportional to a contour of a detector that detects the collimated beam; a second collimator with blades, wherein slopes of two oppositely-facing surfaces of at least one of said blades are different from each other; and a third collimator having at least two sets of plates, wherein said plates in a set pivot with respect to each other."

Wieczorek et al. do not describe or suggest a method for reducing dosage of radiation incident on a subject as recited in Claim 20. Specifically, Wieczorek et al. do not describe or suggest detecting, by a detector, the collimated beam of radiation, where the collimating is performed by a collimating device that is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of a detector that detects the collimated beam, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Wieczorek et al. describe a scintillator layer that consists of a plurality of scintillator elements. A plurality of intermediate layers of radiation-absorbing metals are poured into a pattern of recesses along a plurality of side faces of the scintillator elements. The scintillator layer is suitable for use in a known detector. Accordingly, Wieczorek et al. do not describe or suggest a collimating device that is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of a detector that detects the collimated beam, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 20 is submitted to be patentable over Wieczorek et al.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claim 1, 2, 11, 12, and 20 be withdrawn.

The rejection of Claims 1, 2, 10-12, 20, and 21 under 35 U.S.C. § 102(e) as being anticipated by Popescu (U.S. Patent No. 6,501,828) is respectfully traversed.

Popescu describes a computed tomography apparatus (1) including a gantry (2). The gantry rotates around an examination subject, a patient P, while a fan-shaped x-ray beam (7) emanates from an x-ray source (3), which penetrates the patient P and is incident on an x-ray detector (4) (Figure 1, column 4, lines 45-50). An adjustment of a plurality of elements (13, 14) of a collimator (11) of the apparatus ensues along a circular path (16) whose curvature center lies in a focus F of the x-ray source (column 5, lines 30-32).

Claim 1 is recited above.

Popescu does not describe or suggest an imaging system as recited in Claim 1. Specifically, Popescu does not describe or suggest a detector configured to detect the collimated beam, where the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Popescu describes a computed tomography apparatus including an x-ray detector. An adjustment of a plurality of elements of a collimator of the apparatus ensues along a circular path whose curvature center lies in a focus F of an x-ray source. A description of the curved detector as shown in Figure 1 of Popescu and the collimator elements that are adjusted along a circular path having a focus F as a center of curvature does not teach proportionality as recited in Claim 1. Hence Popescu does not teach a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector. Accordingly, Popescu does not describe or suggest the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 1 is submitted to be patentable over Popescu.

Claims 2 and 10 depend from independent Claim 1. When the recitations of Claims 2 and 10 are considered in combination with the recitations of Claim 1,

Applicants submit that dependent Claims 2 and 10 likewise are patentable over Popescu.

Claim 11 is recited above.

Popescu does not describe or suggest a computed tomography imaging system as recited in Claim 11. Specifically, Popescu does not describe or suggest a detector configured to detect the collimated x-ray beam, where the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Popescu describes a computed tomography apparatus including an x-ray detector. An adjustment of a plurality of elements of a collimator of the apparatus ensues along a circular path whose curvature center lies in a focus F of an x-ray source. A description of the curved detector as shown in Figure 1 of Popescu and the collimator elements that are adjusted along a circular path having a focus F as a center of curvature does not teach proportionality as recited in Claim 11. Hence Popescu does not teach a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector. Accordingly, Popescu does not describe or suggest the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 11 is submitted to be patentable over Popescu.

Claim 12 depends from independent Claim 11. When the recitations of Claim 12 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claim 12 likewise is patentable over Popescu.

Claim 20 is recited above.

Popescu does not describe or suggest a method for reducing dosage of radiation incident on a subject as recited in Claim 20. Specifically, Popescu does not describe or suggest detecting, by a detector, the collimated beam of radiation, where the collimating is performed by a collimating device that is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of a detector that detects the collimated beam, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Popescu describes a computed tomography apparatus including an x-ray detector. An adjustment of a plurality of elements of a collimator of the apparatus ensues along a circular path whose curvature center lies in a focus F of an x-ray source. A description of the curved detector as shown in Figure 1 of Popescu and the collimator elements that are adjusted along a circular path having a focus F as a center of curvature does not teach proportionality as recited in Claim 20. Hence Popescu does not teach a first collimator including at least one radio opaque member having a curved contour proportional to a contour of a detector that detects the collimated beam. Accordingly, Popescu does not describe or suggest a collimating device that is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of a detector that detects the collimated beam, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 20 is submitted to be patentable over Popescu.

Claim 21 depends from independent Claim 20. When the recitations of Claim 21 are considered in combination with the recitations of Claim 20, Applicants submit that dependent Claim 21 likewise is patentable over Popescu.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claim 1, 2, 10-12, 20, and 21 be withdrawn.

The rejection of Claims 3 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Popescu in view of Okazaki (U.S. Patent No. 5,801,939) is respectfully traversed.

Popescu is described above.

Okazaki describes system including a coarse positioner (101), which is driven by a servo motor or the like, has a large range of movement, a relatively low positioning resolution, and a relatively slow response speed (column 7, lines 27-29). The system includes a fine positioner (102) that is driven to produce movement by a piezoelectric actuator or the like (column 7, lines 32-34).

Claim 3 depends from independent Claim 1, which is recited above.

Neither Popescu nor Okazaki, considered alone or in combination, describe or suggest an imaging system as recited in Claim 1. Specifically, neither Popescu nor Okazaki, considered alone or in combination, describe or suggest a detector configured to detect the collimated beam, where the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Popescu describes a computed tomography apparatus including an x-ray detector. An adjustment of a plurality of elements of a collimator of the apparatus ensues along a circular path whose curvature center lies in a focus F of an x-ray source. A description of the curved detector as shown in Figure 1 of Popescu and the collimator elements that are adjusted along a circular path having a focus F as a center of curvature does not teach proportionality as recited in Claim 1. Hence, Popescu does not teach a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector. Okazaki describes a coarse positioner and a fine positioner. Accordingly, neither Popescu nor Okazaki, considered alone or in combination, describe or suggest the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second

collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 1 is submitted to be patentable over Popescu in view of Okazaki.

When the recitations of Claim 3 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 3 likewise is patentable over Popescu in view of Okazaki.

Claim 13 depends from independent Claim 11 which is recited above.

Neither Popescu nor Okazaki, considered alone or in combination, describe or suggest a computed tomography imaging system as recited in Claim 11. Specifically, neither Popescu nor Okazaki, considered alone or in combination, describe or suggest a detector configured to detect the collimated x-ray beam, where the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two sets of plates, where the plates in a set pivot with respect to each other. Rather, Popescu describes a computed tomography apparatus including an x-ray detector. An adjustment of a plurality of elements of a collimator of the apparatus ensues along a circular path whose curvature center lies in a focus F of an x-ray source. A description of the curved detector as shown in Figure 1 of Popescu and the collimator elements that are adjusted along a circular path having a focus F as a center of curvature does not teach proportionality as recited in Claim 11. Hence Popescu does not teach a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector. Okazaki describes a coarse positioner and a fine positioner. Accordingly, neither Popescu nor Okazaki, considered alone or in combination, describe or suggest the collimator is separate from the detector and is one of a first collimator including at least one radio opaque member having a curved contour proportional to a contour of the detector, a second collimator with blades, where slopes of two oppositely-facing surfaces of at least one of the blades are different from each other, and a third collimator having at least two

sets of plates, where the plates in a set pivot with respect to each other. For the reasons set forth above, Claim 11 is submitted to be patentable over Popescu in view of Okazaki.

When the recitations of Claim 13 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claim 13 likewise is patentable over Popescu in view of Okazaki.

For at least the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 3 and 13 be withdrawn.

Moreover, Applicants respectfully submit that the Section 103 rejection of Claims 3 and 13 is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Popescu nor Okazaki, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Popescu with Okazaki because there is no motivation to combine the references suggested in the cited art itself.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. *In re Vaeck*, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate

the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Popescu teaches a computed tomography apparatus including an x-ray detector. An adjustment of a plurality of elements of a collimator of the apparatus ensues along a circular path whose curvature center lies in a focus F of an x-ray source. Okazaki teaches a coarse positioner and a fine positioner. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection of Claims 3 and 13 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the rejections of Claims 3 and 13 under 35 U.S.C. 103(a) be withdrawn.

Newly added Claim 22 depends from independent Claim 1, which is submitted to be in condition for allowance and is patentable over the cited art. For at least the reasons set forth above, Applicants respectfully submit that Claim 22 is also patentable over the cited art.

In view of the foregoing amendment and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

William J. Zychlewicz
Registration No.: 51,366
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070

ANNOTATED MARKED-UP DRAWING

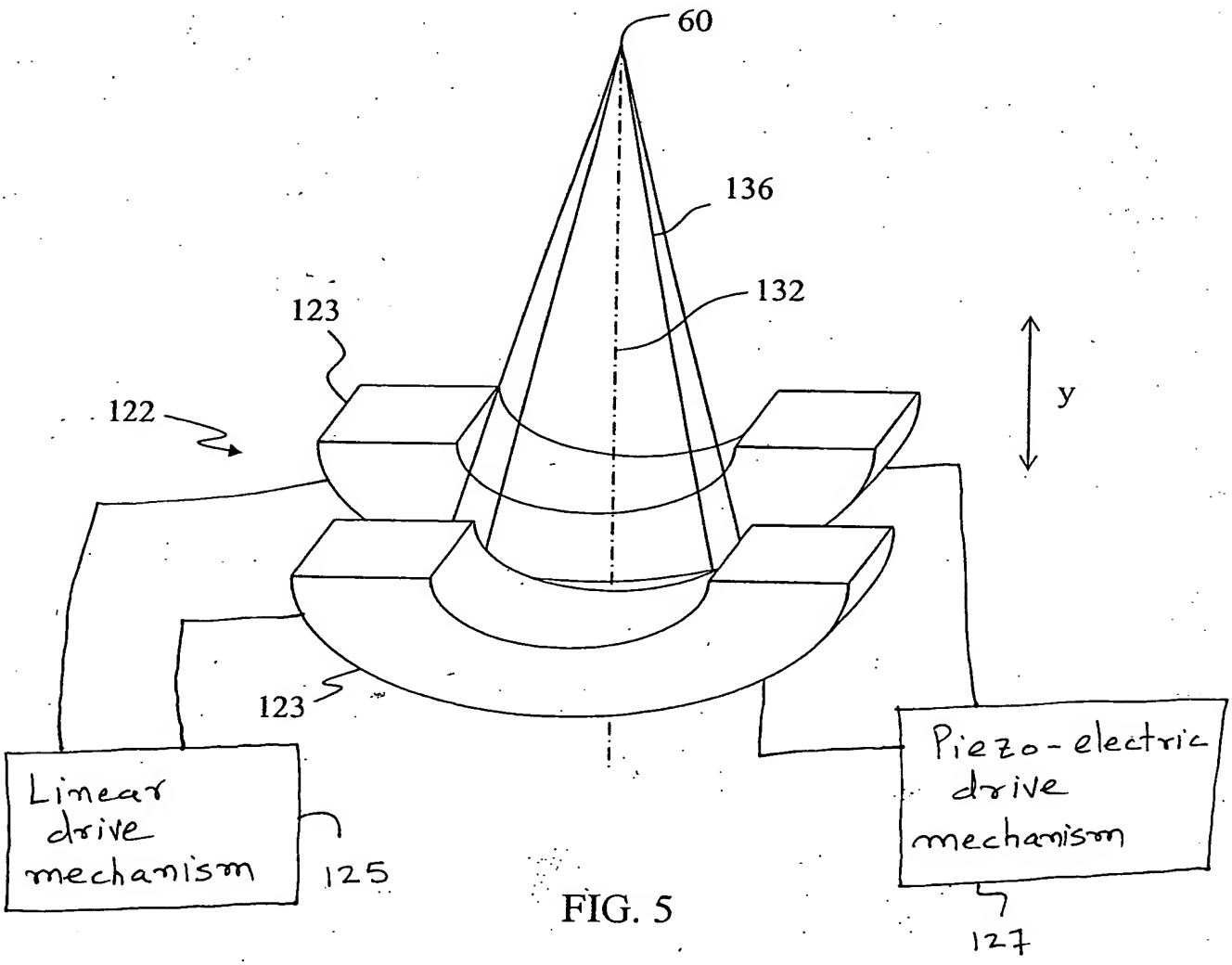

FIG. 5